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Diagnostic Laparoscopy to assess tubal and pelvic pathology in patients of subfertility: A retrospective analysis

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ABSTRACT

Aims: To assess the tubal pathology contributing to primary and secondary infertility by laparoscopic examination.

Methods: The study was carried out in the department of Obstetrics and gynecology, Grande International Hospital. This is a retrospective study conducted in tertiary care hospital over a period of 2 yrs. From 2020 February to 2022 January. All patients with complaints of infertility (primary and secondary) who were admitted, evaluated and operated for infertility in Obstetrics and Gynaecology department of Grande international Hospital.

Results: Of the 52 patients minimum age was 20 and maximum was 46 with mean age of 30.52±4.885. Thirty eight patients had primary infertility and 14 had secondary. Forty patients had normal uterus while 12 had enlarged uterus. Hydrosalpinx was found in 11.5 % and 30.8% in right and left tube respectively. Pyosalpinx was found in 9.6% and 7.7% in right and left tube respectively. Bilateral tubes were patent in 22 cases while bilateral blocked tube was found in 13 cases so rest 17 cases had unilateral tubal block. Pelvic adhesions were found in 44.2 % cases. Most of them were associated with endometriosis (15.4%) followed by ovarian cyst (11.5%) and fibroid uterus (11.5%).

Conclusions: Majority had normal tubal pathology followed by edematous tube, hydrosalpinx and pyosalpinx. Endometriosis, fibroid and ovarian cyst were commonly associated conditions.

Keywords: infertility, laparoscopy, tubal pathology

INTRODUCTION

Infertility is defined as the inability of a couple to conceive after one year of unprotected and adequate sexual intercourse. It affects 10 to 15% couples in both developed and developing countries.[1] It can be primary in which case the woman has never conceived before or secondary when there is prior conception irrespective of outcome.[2] The main causes of infertility include male factor tubal and peritoneal factors (30-40%). cervical factors (5%), uterine factor (15%) and unexplained infertility (10%). Tubal infertility

alone accounts for 12% to 33 % of female infertility.[3] Tubal factor infertility may result from complete blockage of the distal end of the fallopian tube (hydrosalpinx) as sequelae of sexually transmitted disease (STD), surgical interventions or other intraabdominal conditions, nongynecological abdomino pelvic infection, endometriosis or a congenital anomaly.[4]

The assessment of tubal function is limited to its patency with hysterosalpingography (HSG) and hydrotubation at laparoscopy.[3] Laparoscopy is generally regarded as definitive test for evaluation of tubal factors. It provides both panoramic view of pelvic reproductive anatomy and a magnified view of uterine, ovarian, tubal and peritoneal surfaces and its pathology.[5] In the same setting therapeutic interventions like adhesiolysis, PCO drilling, cystectomy etc can be performed in these patients.[6]

Here the study was undertaken to analyse various tubal pathologies leading to infertility and to evaluate the role of laparoscopy in the management of infertility.

METHODS

This was a retrospective study conducted in tertiary care hospital for a period of two year. All patients with complaints of infertility (primary and secondary) who were admitted and evaluated for infertility in OBG department of Grande International Hospital Kathmandu for a period of one and half year were included in the study. Patients with absolute or relative contraindications for laparoscopy and patients not willing to undergo laparoscopic surgery were excluded from the study. Informed written consent was obtained. Diagnostic Laparoscopy was performed in the preovulatory period between day 6 and 11 of the cycle under general anesthesia. Laparoscopy was performed after creating pneumo peritoneum, the pelvic organs were examined for any abnormality. Uterus was examined for size, shape, position, surface, features suggestive of endomeriosis, adenomyosis, fibroids were looked for. Fallopian tube, ovaries, pelvic peritoneum, pouch of Douglas, and peritoneal cavity were examined for any abnormality suggestive of infertility. Tubal patency was tested by chromopertubation. Methylene blue dye was injected with a 20 ml syringe through Foleys catheter number 8. Spillage of the dye from the fimbrial end of bilateral fallopian tubes visualized. Any abnormality detected which could be surgically corrected was treated in the same setting. Following the procedure patient was shifted to post operative ward and discharged on the following day or a day later.

Statistical analysis was performed using SPSS, software version 16. The continuous variables were expressed as mean ± SD and categorical variables as proportions.

RESULTS

Of the 52 patients of infertility minimum age was 20 yrs and maximum was 46 yrs with mean age 30.52±4.885. Thirty-eight patients (73.1%) had primary infertility and 14 (26.9%) had secondary infertility. Among those 52 patients 12 (23.1%) had enlarged uterus while 40 (76.9%) had normal size uterus.

Majority had normal tubes and rest had either edematous, hydosalpinx or pyosalpinx as common the common pathology. [Table-1]

Table-1: Tubal pathology (N=52)

	Right tube	Left tube
Normal	27 (51.9%)	24 (46.2%)
Edematous	6 (11,5%)	4 (7.7%)
Hydrosalpinx	6 (11,5%)	16 ((30.8%)

Pyosalpinx	5 (9.6%)	4 (7.7%)
Absent	3 (5.8%)	2 (3.8%)
Long stretched	2 (3.8%)	0
Kinked	2 (3.8%)	4 (7.7%)
Nodular	1 (1.9%)	1 (1.9%)

Twenty-three (44.2%) cases had peritubular adhesions; and among 52 patients, the common associated pathologies were endometriosis, fibroid and ovarian cysts. [Table-2]

Table-2: Associated pelvic pathology (N=52)

Pathology	N	%
Endometriosis	8	15.4
Fibroid	6	11.5
Ovarian Cyst	6	11.5
PCOS	3	5.8
TO Mass	3	5.8
Dermoid cyst	1	1.9
Adenomyosis	1	1.9
None	24	46.1

DISCUSSION

In our study fifty two patients underwent laparoscopic surgeries (diagnostic laparoscopy or laparoscopic surgery for pelvic pathology in infertile female). Out of these 38 (73.1%) had primary and 14 (26.9 %) had secondary infertility. A normal fallopian tube is needed for ovum transport, fertilization and transport of fertilized ovum to the uterus. Any abnormality of fallopian tube interfere with fertility. Function of the tube may be impaired due to peritubal adhesion, hydrosalpinx, too long or short tube, kinking and increased tortuosity of tubes. Tubal and peritoneal pathology are the most common primary diagnosis in 30-35% of infertile couples.[7] Peritubular adhesions was seen in 44.2% in our study. Thimmappa et al found 30 % peritubular adhesions in their study.[8] In our study we found hydrosalpinx in 11.5% cases in right fallopian tube and 30.8 % in left fallopian tube. While Hamid et al found only 4.1 % of hydrosalpinx in their cases.[9] We found bilateral blocked tube in 24.7% cases, Hamid et al reported 15% tubal block in their cases. While Biswas R and TA Chowdhury found bilateral tubal block in only 2 % cases.[10]

Endometriosis occurs in 7-10% of women in general population with a prevalence of 38% (20-50%) in infertile women. Prevalence of endometriosis in our study was 15.4%. In study conducted Sharma et al[11] and Thimmappa et al[8] endometriosis was found in 6.6% each. While chakraborthy et al found only 4.6% cases of endometriosis.[12] Apart from tubal factors, abnormalities of the uterus may cause infertility. In this study, fibroid uterus was found in 11.5% cases and adenomyosis in 1.9% cases which could be contributing factors for infertility.

In this study PCOs was found in 5.8% of patients. Thimmappa et al found PCOs in 26.6% cases.[8]

Diagnostic laparoscopy is the gold standard in diagnosing the tubal pathology, peritoneal factor, endometriosis and any other intra-abdominal causes of infertility. It not only helps to diagnose but in the same setting required treatment can be done.

CONCLUSION

Diagnostic laparoscopy helped us to find out cause of infertility in many women who were tagged as having unexplained infertility and who had failed IUI or IVF.

Majority had normal tubal pathology followed by edematous tube, hydrosalpinx and pyosalpinx. Endometriosis, fibroid and ovarian cyst were commonly associated conditions.

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